

Chrysiptera kuiteri, a new species of Damselfish (Pomacentridae) from Indonesia and Sri Lanka

Gerald R. Allen¹ and Arjan Rajasuriya²

¹ Department of Aquatic Vertebrates, Western Australian Museum, Francis Street, Perth, Western Australia 6000

² National Aquatic Resources Agency, Crow Island, Mattakkuliya, Colombo-15, Sri Lanka

Abstract – A new species of pomacentrid, *Chrysiptera kuiteri*, is described from three specimens. The first specimen was collected during 1991 off northern Bali, Indonesia. Two additional specimens were captured at north-western Sri Lanka in 1994. It is closely related to *C. tricineta* (Allen and Randall) from the western Pacific. The new species differs, however, by having wider dark bars on the body, mainly white pelvic fins, and 20–22 gill rakers on the first arch (23–26 in *C. tricineta*).

INTRODUCTION

Damselfishes (Pomacentridae) are among the most speciose and conspicuous of all fish groups associated with tropical and subtropical reefs. The family was reviewed by Allen (1991), who recognized 322 species in 28 genera. Since the publication of this work seven additional species have been described (Allen 1992, 1993, 1994; Allen and Adrim 1992; Allen and Smith 1992).

The present paper describes a new species belonging to *Chrysiptera* Swainson as defined by Allen (1991). The genus contains 26 species that range widely in the tropical Indo-west and central Pacific region. They are small (usually less than 70 mm SL), frequently colourful fishes inhabiting coral reefs and adjacent sand-rubble habitats. The new species was first collected at the Indonesian island of Bali in 1991. Additional specimens were obtained more recently by the second author at Sri Lanka.

The methods of counting and measuring are the same as those described by Allen (1972), except that the length of the dorsal and anal spines are measured proximally from the base of the spine rather than from the point where the spine emerges from the scaly sheath. Gill-raker count is a total of upper and lower-limb elements on the first branchial arch. The last dorsal and anal soft ray is split at the base and is counted as a single element. The fraction "1/2" appearing in the scale count above the lateral line refers to a small truncated scale at the base of the dorsal fin.

Counts and proportions appearing in parentheses apply to the paratypes. Proportional measurements expressed in thousandths of the standard length are provided in Table 1. A summary of counts for fin rays, lateral-line scales

and gill rakers on the first arch appears in Table 2. Type specimens have been deposited at the National Aquatic Resources Agency, Colombo, Sri Lanka (NARA); Pusat Penelitian dan Pengembangan Oseanologi, Jakarta, Indonesia (NCIP); and the Western Australian Museum, Perth (WAM).

SYSTEMATICS

Chrysiptera kuiteri sp. nov.

Figure 1; Table 1

Holotype

NCIP 6131, 42.8 mm SL, near shipwreck off Tulamben, NE coast of Bali, Indonesia (approximately 8°18'S, 115°37'E), 20m, hand net, R. Kuitier, October 1991.

Paratypes

NARA (F).0015, 32.6 mm SL, off Kandakuliya, northwest Sri Lanka, (approximately 8°14.7'N, 79°40.3'E), 18.5 m, hand net, A. Rajasuriya, 16 March 1994; WAM P.30827–001, 36.2 mm SL, collected with NARA paratype.

Diagnosis

A species of the pomacentrid genus *Chrysiptera* with the following combination of characters: dorsal rays XIII, 11; anal rays II,12; pectoral rays 17 (17 or 18); gill rakers on first branchial arch 6 or 7 + 14 or 15, total rakers 20–22; tubed lateral-line scales 16–18; colour in life white with three broad black bars, the first through eye, the second at level of spinous dorsal fin, and the third at level of soft dorsal fin; pelvic fins mainly white.



Figure 1 *Chrysiptera kuitieri*, holotype, 42.8 mm SL, Tulamben, Bali.

Table 1 Proportional measurements of type specimens of *Chrysiptera kuitieri* as percentage of the standard length.

Character	Holotype	Paratype	Paratype
	NCIP 6131	WAM P.30827-001	NARA (F).0015
Standard length (mm)	39.5	36.2	32.6
Body depth	45.3	39.5	45.6
Body width	18.5	18.5	20.0
Head length	33.2	34.0	39.1
Snout length	7.9	8.6	9.4
Orbit diameter	12.9	13.5	13.5
Interorbital width	8.4	9.7	10.3
Caudal peduncle depth	14.7	14.6	15.3
Caudal peduncle length	11.4	12.2	15.0
Predorsal length	40.0	35.4	42.4
Preanal length	63.1	64.9	75.3
Prepelvic length	36.2	40.1	44.4
Length dorsal fin base	64.7	55.2	65.3
Length anal fin base	29.7	23.8	29.7
Length pectoral fin	29.2	30.4	30.0
Length pelvic fin	35.3	38.7	45.0
Length pelvic spine	19.2	21.3	21.5
Length 1st dorsal spine	7.0	7.5	5.6
Length 2nd dorsal spine	11.7	13.8	11.2
Length 6th dorsal spine	17.3	16.9	17.4
Length longest dorsal ray	23.8	24.9	22.1
Length 1st anal spine	6.3	7.7	7.1
Length 2nd anal spine	15.9	16.6	16.8
Length longest anal ray	25.0	29.0	25.9
Length caudal fin	29.9	35.4	32.9

Description

Dorsal rays XIII,11; anal rays II,12; pectoral rays 17 (17 or 18); gill rakers on first branchial arch 7 + 15 (6 +14), total rakers 22 (20); lateral-line scales with tubes 16 (16–18); vertical scale rows; scales above lateral-line to base of middle dorsal spines 1 1/2; scales below lateral line to anus 9.

Body depth 2.2(2.2–2.5) in standard length; maximum body width 2.5 (2.1–2.3) in depth; head length contained 3.0 (2.6–2.9) in standard length; snout 4.2 (4.0–4.2), eye 2.6 (2.5–2.9), interorbital space 3.9 (3.5–3.8), least depth of caudal peduncle 2.3 (2.3– 2.6), length of caudal peduncle 2.9 (2.6–2.8), all in head length.

Mouth oblique, terminal, the maxillary reaching to a vertical slightly beyond anterior edge of eye; teeth of jaws uniserial, conical in shape, about 32 teeth in lower jaw and 38 in upper; single nasal opening on each side of snout; nostril with a low fleshy rim; preorbital and suborbital relatively narrow, the greatest depth about one-fourth eye diameter, ventral margin smooth; margin of preopercle mainly smooth, but weak denticulations present on lower portion of rear margin of holotype; opercular series smooth except a blunt, flattened spine present on upper edge of opercle, near angle.

Scales of head and body finely ctenoid; preorbital, suborbital, snout tip, lips, chin, and isthmus naked; preopercle with 3 scale rows (2

rows in paratypes), rear margin narrowly naked; dorsal and anal fins with a basal scaly sheath; proximal two-thirds of caudal fin covered by scales; paired fins covered by scales only at base; axillary scale of pelvic fins about two-thirds length of pelvic spine.

Tubed lateral-line scales ending below posterior spines of dorsal fin; pits or pores present on 4 (4–6) scales immediately posterior to last tubed; a series of 9 (8) pored or pitted scales mid-laterally on caudal peduncle to caudal base.

Origin of dorsal fin at level of second tubed scale of lateral line; spines of dorsal fin gradually increasing in length to about sixth spine, remaining spines slightly decreasing in length; membrane between spines slightly incised; first dorsal spine 1.7 (1.9–2.0) in second dorsal spine; second dorsal spine 1.5 (1.2–1.6) in sixth dorsal spine; sixth dorsal spine 1.9 (2.0–2.3) in head; longest soft dorsal ray 1.4 (1.4–1.8) in head; length of dorsal fin base 1.5 (1.5–1.8) in standard length; first anal spine 2.5 (2.1–2.4) in second anal spine; second anal spine 2.1 (2.1–2.3) in head; longest soft anal ray 1.3 (1.2–1.5) in head; base of anal fin 2.2 (2.2–2.3) in base of dorsal fin; caudal fin emarginate with rounded lobes, its length 1.1 (1.0–1.2) in head length; pectoral fin relatively short, just reaching a vertical through origin of anal fin, the longest ray 1.1 (1.1–1.3) in head length; filamentous tips of pelvic fins reaching well beyond origin of anal fin, the longest ray 0.9 in head length.

Colour of holotype in alcohol: overall white to yellow white with three broad black bars as follows: one on head passing through eye, its maximum width 1.7 (1.9) in head length; one at level of spinous dorsal fin, tapered ventrally; one extending to belly, but not encircling body, its maximum width 1.2 (1.4–1.6) in head length; one

just anterior to caudal peduncle covering most of soft dorsal fin and extending onto rear portion of anal fin, its maximum width 1.5 (1.4) in head length; dorsal and anal fins translucent to whitish, except where interrupted by black bars; remaining fins translucent to whitish except inner portion of pelvics slightly dusky. The paratypes have a similar coloration.

Colour in life: overall white with three black bars as described above.

Remarks

This species is closely related to *C. tricineta* (Allen and Randall 1974), which has an apparent anti-tropical distribution in the western Pacific Ocean; it occurs from Samoa to the Coral Sea in the South Pacific and from Taiwan to southern Japan in the North Pacific. Although *C. kuiteri* is presently known only from Sri Lanka and Bali, further collecting in the eastern Indian Ocean will probably reveal a more widespread distribution. Its presence at Bali is not unexpected, as many Indian Ocean "vagrants" have been sighted there (Allen and Kuiter personal observations between 1986–1993).

Colour pattern differences are the main means of separation for these two species. The three black bars of *C. kuiteri* are consistently wider than those of *C. tricineta*. This discrepancy is particularly evident when comparing the pair of bars on the body. The maximum width of the first body bar (below spinous dorsal fin) of *C. kuiteri* is wider than the maximum width of the white interspace between the two body bars, at least dorsally. Conversely, in *C. tricineta* the maximum width of the white interspace is considerably wider than the first body bar. Similarly, the last bar of *C. kuiteri* is much broader than the white area of the caudal peduncle. This bar on *C. tricineta* is about equal in



Figure 2 Underwater photograph of *C. tricineta*, approximately 38 mm SL, Coral Sea.

width to the white area of the caudal peduncle. There is also a difference in the colour of the pelvic fins. These fins are mainly white with only a small amount of duskiness on the innermost portion of *C. kuiteri*, but are mainly black with a white anterior margin in *C. tricineta*. There also appears to be a difference in number of total gill rakers on the first arch, although more specimens of both species are required before this can be substantiated. The gill arches are missing in one of the specimens of *C. kuiteri*, but the other two have counts of 20 and 22. Counts for *C. tricineta* range from 23 to 26.

The habitat of both *C. kuiteri* and *C. tricineta* consists of flat or sloping sand bottoms with sparse coral outcrops in a depth range of about 15–30 m. These areas are subjected to strong currents and underwater visibility is generally good (to 20–30 m). *C. kuiteri* is usually encountered alone or in pairs and hovers a short distance above the substratum. Presumably it feeds on zooplankton. The species is uncommon at both Bali and Sri Lanka. Fewer than five fish were sighted at Bali. In addition to the northwestern site on Sri Lanka, it was also sighted at Trincomalee and Batticaloa on the central east coast.

It is named *kuiteri* in honour of Mr. Rudie H. Kuitert of Melbourne, Australia who collected the holotype. The name also acknowledges Mr. Kuitert's many valuable contributions to our knowledge of tropical reef fishes of the Australian-Indonesian region.

ACKNOWLEDGEMENTS

We thank Mr. Rudie H. Kuitert for collecting the

holotype of this species and allowing us to describe it. He also provided valuable underwater photographs. We also thank the Swedish Agency for Research Cooperation with Developing Countries (SAREC) for helping to fund the second author's field work in Sri Lanka.

REFERENCES

- Allen, G.R. (1972). *Anemonefishes, their classification and biology*. T.F.H. Publications, Inc., Neptune, New Jersey.
- Allen, G.R. (1991). *Damselfishes of the world*. Mergus Publishers, Melle, Germany.
- Allen, G.R. (1992). A new species of damselfish (genus *Pomacentrus*) from north-western Australia. *Records of the Western Australian Museum* 15: 691–695.
- Allen, G.R. (1993). Two new species of damselfishes (*Pomacentrus*), with comments on the validity of two additional pomacentrid fishes. *Revue Francaise d'Aquariologie*, 20: 21–26.
- Allen, G.R. (1994). Two new species of damselfishes (*Pomacentridae*) from Indonesian Seas. *Revue Francaise d'Aquariologie*, 21: 86–90.
- Allen, G.R. and Adrim, M. (1992). A new species of damselfish (*Chrysiptera: Pomacentridae*) from Irian Jaya, Indonesia. *Records of the Western Australian Museum* 16: 103–108.
- Allen, G.R. and Smith, K.N. (1992). A new species of damselfish (*Pomacentridae: Stegastes*) from Ascension Island, Atlantic Ocean. *Records of the Western Australian Museum* 16: 113–117.

Manuscript received 28 September 1994; accepted 16 May 1995.